

Amendment to the Claims

Claim 1 (currently amended) An apparatus ~~useful for disposal of removing~~ hydrogen ~~in from~~ a fluid comprising hydrogen, ~~and residual amounts of HF and aerosol electrolyte from a fluorine generator, the apparatus comprising:~~

- a) an electrolyte aerosol removal unit connected to the fluorine generator and containing comprising an aerosol removal composition wherein the electrolyte aerosol removal unit is adapted to allow the fluid to flow there through therein through which the fluid is adapted to flow; and
- b) a catalytic unit connected to the electrolyte aerosol removal unit and comprising a catalytically activated combustion surface comprising one or more layers of wire screen, the catalytic unit adapted to be positioned inside of a forced convection duct, ~~the catalytic unit fluidly connected to the aerosol removal unit by a conduit,~~ the catalytically activated combustion surface adapted to combust the hydrogen in an oxygen-containing stream, ~~typically air or exhaust gases comprising air flowing through the forced convection duct.~~

Claim 2 (original) The apparatus of claim 1 wherein the apparatus is modular.

Claim 3 (original) The apparatus of claim 1 wherein the apparatus is portable.

Claim 4 (currently amended) The apparatus of claim 1 wherein the aerosol removal unit component is in bed form.

Claim 5 (original) The apparatus of claim 1 wherein the aerosol removal composition comprises a composition selected from the group consisting of soda lime, sodium fluoride, heated activated aluminum oxide, finely divided nickel, or combination thereof.

Claim 6 (currently amended) The apparatus of claim 1 wherein the conduit that fluidly connects the aerosol removal unit and the catalytic unit are connected by a conduit comprising ~~is selected from the group consisting of~~ a nickel tube or and a nickel-lined tube.

Claim 7 (currently amended) The method apparatus of claim 16 4 wherein the aerosol removal unit is maintained at a temperature of ranging from about 25°C to about 200°C.

Claims 8-9 (canceled)

Claim 10 (currently amended) The method apparatus of claim 16 4 wherein the catalytically activated combustion surface is maintained ~~maintain~~ at a temperature of at least 70°C.

Claim 11 (currently amended) The method apparatus of claim 10 wherein the catalytically activated combustion surface is maintained ~~maintain~~ at a temperature of at least 200°C.

Claim 12 (currently amended) The apparatus of claim 1 wherein the aerosol removal unit and catalytic unit are positioned ~~position~~ at a distance from the a fluorine generator.

Claim 13 (currently amended) The apparatus of claim 1 wherein the aerosol removal unit and the catalytic unit are mounted on top of the ~~and within the footprint of~~ a fluorine generator.

Claim 14 (currently amended) The apparatus of claim 1 wherein the catalytically activated combustion surface comprises one or more layers of wire screen, wherein individual wires of the wire screen may be the same or different in composition, diameter, and orientation.

Claim 15 (currently amended) The apparatus of claim 14 wherein the wire screen catalytically activated combustion surface is a 10-ply layer of 95 percent platinum, 5 percent rhenium alloy screen.

Claim 16 (currently amended) A method for disposal of hydrogen in a fluid comprising hydrogen and residual amounts of HF and aerosol electrolyte from a fluorine generator, the method comprising ~~the steps of:~~:

- a) flowing the fluid through an electrolyte aerosol removal unit component comprising containing an aerosol removal composition, ~~wherein the fluid contacts to contact the fluid with~~ the aerosol removal composition ~~and form~~ thereby forming a hydrogen-rich fluid reduced in aerosol; and
- b) contacting the hydrogen-rich fluid reduced in aerosol with a catalytically activated combustion surface comprising one or more layers of wire screen positioned inside of a forced convection duct, while ~~an oxygen containing stream a gas comprising oxygen~~ flows through the forced convection duct, thereby ~~combusting to combust~~ the hydrogen with oxygen in the oxygen-containing stream.

Claim 17 (canceled)

Claim 18 (currently amended) A method for generating fluorine and disposal of by-product hydrogen in a fluid comprising hydrogen, residual amounts of HF and aerosol electrolyte from a fluorine generator, the method comprising ~~the steps of:~~:

- a) generating a fluorine-rich stream and a hydrogen-rich stream from the fluorine generator, the hydrogen-rich stream comprising minor amounts of electrolyte and hydrogen fluoride;
- b) purifying ~~routing~~ the fluorine-rich stream ~~to a cleanup train~~ to produce a purified fluorine stream; and
- c) treating ~~routing~~ the hydrogen-rich stream to reduce ~~the apparatus of claim 1, thereby substantially reducing the aerosol content and~~ combust ~~combusting~~ the hydrogen by:
flowing the hydrogen-rich steam through an electrolyte aerosol removal unit containing an aerosol removal composition to produce a hydrogen-rich fluid reduced in aerosol; and
contacting the hydrogen-rich fluid reduced in aerosol with a catalytically activated combustion surface comprising one or more layers of wire screen positioned inside of a forced convection duct, while an oxygen containing stream flows through the forced convection duct.

Claim 19 (new) The apparatus according to claim 1 wherein the oxygen-containing stream is air or exhaust gases.